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ABSTRACT

This report examined the effect of observer presence and absence on teacher behavior in the classroom. The study involved two undergraduate teachers in a preschool classroom serving eight children with special problems. Observations were made during a 45-minute work-play period when one of the teachers was in the play area. One observer recorded the teacher's behaviors behind a one-way mirror; the other observer was present in the classroom for 10 minutes of the 20-minute observation period. Records were kept continually throughout the play period by the observer behind the glass. In this study, physical contact was the teacher behavior observed, and was noted under one of the following categories: (a) teacher physical contact to appropriate child behavior, and (b) teacher physical contact to innappropriate child behavior. When the teachers were asked to increase physical contact with the children, the results showed that teachers carried out the request more when the observer was present than when absent. (A list of references and a set of tables indicating the sequence of experimental conditions and percentage of physical contact are included.) (JS)

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A PILOT PROJECT TO EXAMINE WHETHER TEACHERS "TURN ON" ONLY WHEN OBSERVERS ARE PRESENT[1]

University of Kansas

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INTRODUCTION

There is a principle in physics called Heisenberg's principle of uncertainty that was formulated when trying to observe electrons. It was discovered that by observing the elections it altered them. In other words, by adding observers to the original environment one may not be able to get an accurate picture of what is being observed. This may also be true in observations which take place in applied research settings.

Surratt, Ulrich and Hawkins (1969) hinted at the possibility that the presence of observers may cue particular behaviors in children. Reid (1970) and Romanczyk, Kent, Diament and O'Leary (1971) also found that the accuracy of observers decreased when reliability assessment is made covertly and increased when assessment is made overtly.

Several studies (e.g., Madsen, Becker and Thomas, 1968; Cooper, Thomson and Baer, 1970) have demonstrated the effectiveness of teacher attention in applied settings. However, in most of these studies it was obvious to the teachers that their use of their attention was being observed and recorded. Just as the studies described in the last paragraph discovered that the behavior of children and observers is effected by the presence of other observers it is conceivable that the behavior of the teacher or charge agent is similarly effected.

METHOD

Subjects

Two undergraduate students who were involved as practicum teachers in a preschool classroom for children with special problems were observed in the present study. Teacher 1 was experiencing her first semester teaching in a classroom. Teacher 2 had one semester of teaching experience in a normal preschool class, but it was her first experience teaching in a classroom for children with special problems.

Setting

This study was conducted in The Child Development Laboratories at the University of Kansas in a classroom for children with special problems. The classroom served eight children with special problems. There were five teachers in the classroom. There were two graduate student teachers, the head teacher and the two undergraduate teachers who were observed in the present study. Observations of the teachers took place during a 45-minute work-play period when one of them was in the play area.

Procedure

Two observers with clipboards and stop watches observed a teacher's behavior (physical contact with a child) in ten-second intervals. Only the first occurrence of that behavior was scored in any interval. Observer 1 actually recorded the teacher's behaviors behind a one-way mirror. Observer 2 was present in the classroom, observing and recording the teacher's behaviors. However, only the data from behind the mirror is reported here. The observer behind

the mirror observed for twenty minutes. The observer in the classroom observed for ten minutes out of the 20 minute observation period. The remaining 10 minutes of observation took place when there was not an observer present in the classroom. The observer in the classroom generally alternated her presence in the classroom between the first 10 minutes or last 10 minutes of the 20 minute observation session.

Inter-observer agreement was analyzed by having a third observer make simultaneous, but independent observations with the observer behind the one-way mirror at least once in each experimental condition. Agreement was measured by comparing the two observers' records for agreement interval by interval. There were three ways for calculating reliability: 1) the number of agreements that the behavior occurred was divided by the number of agreements plus disagreements for the occurrence of the behavior (occurrence reliability); 2) the number of agreements that the benavior did not occur was divided by the number of agreements plus disagreements for the behavior not occurring (non-occurrence reliability); 3) the number of agreements that the behavior occurred or did not occur was divided by the number of agreements plus disagreements the behavior occurred or did not occur (overall reliability). The mean occurrence reliability was 92%, 97% for non-occurrence reliability and 92% for overall reliability.

Response Definitions

There was one teacher behavior observed, physical contact. There were two categories of physical contact: teacher physical contact to

appropriate child behavior and teacher physical contact to inappropriate child behavior. Physical contact with a child or children was recorded whenever the teacher touched, with her fingers or the palm of her hand, a child. A + or - was scored, depending on whether the child's behavior was appropriate or inappropriate. The results reported here are the per cent of intervals the teacher engaged in physical contact following either inappropriate or appropriate child behaviors.

Experimental Conditions

The effects of observer presence versus observer absence were examined daily. The teachers were not told until the end of the study that they were also being observed when there was no observer in the classroom. In addition, other experimental conditions (described below) were implemented across the duration of the study. The other experimental conditions were Baseline, Request to Increase Physical Contact and for Teacher 1, Request to Increase Physical Contact plus seeing the observation code and a graph of her physical contact.

Baseline. This condition included only a question by the principle investigator to each teacher, asking them if they would participate in an observation study. They were told that the study would not be explained to them until it was completed. After consent was obtained, each of the two teachers were observed while they were in the play area approximately every other day.

Request to increase physical contact. The teachers were told the behavior they had been observed on was physical contact with children. They were asked to increase their contact during the play period.

See graph and code. This condition only occurred for Teacher 1. The teacher was allowed to see daily the definition of physical contact and to see daily her own graph showing only the 10 minutes of data taken when the observer was present in the play area.

Design. The effects of observer presence and absence was compared each day in an AB or BA sequence. Following baseline each teacher was asked to increase their physical contact. For Teacher 1, in the middle of the Request to Increase Physical Contact condition, the teacher was allowed to see the definition and her own graph for seven days.

The total sequence of experimental conditions, therefore, consisted of a daily switching between observer presence and absence. Across the entire experiment for Teacher 1, the sequence of conditions was: Baseline - Request to Increase Physical - Saw Graph and Code - Request to Increase Physical. For Teacher 2 the sequence of conditions was: Baseline - Request to Increase Physical.

Insert Figure 1 about here

The baseline phases for each teacher were of different duration allowing for a multiple baseline analysis of the effects of the Request to increase physical contact condition.

RESULTS

Figures 2 and 3 illustrate the main experimental results. Figure 2 shows the means during the daily 10 minute observer present and observer absent periods across the experimental condtions.

Insert Figure 2 about here

During the 7 days of baseline for Teacher 1, the percentage of physical contact when the observer was present ranged from 7% to 22% with a mean of 13%. When the observer was absent during baseline, the percentage of physical contact ranged from 2% to 32% with a mean of 9%. When Teacher 1 was requested to increase physical contact for 5 days, the percentage increased more when the observer was present, ranging from 15% to 50% with a mean of 26%. When the observer was absent, physical contact ranged from 3% to 28% with a mean of 15%. For Days 22 to 37, Teacher 1 was allowed to see the definition of physical contact and to see her graph for 7 days. During observer presence, the teacher's physical contact under these conditions ranged from 30% to 55% with a mean of 41%. During observer absence, the percentage of physical contact ranged from 13% to 63% with a mean of 43%. The last condition for Teacher 1 was again a request to increase physical contact. When the observer was present, physical contact ranged from 23% to 67% with a mean of 47%. When the observer was absent during this last condition, contact ranged from 28% to 62% with a mean of 44%. There were only two conditions that took place

during Teacher 2's observations. Physical contact during the 15 days of baseline ranged from 2% to 30% with a mean of 10% during observer presence. During observer absence, physical contact ranged from 3% to 38% with a mean of 17%. The last 3 days that Teacher 2 was observed, she was requested to increase her physical contact. During observer presence, physical contact increased to a mean of 41% with a range of 37% to 48%. During observer absence, percentage of physical contact decreased to a mean of 13%, with a range from 10% to 17%.

Figure 3 illustrates the daily data for both teachers during observer presence and absence across all experimental conditions.

Insert Figure 3 about here

During baseline for Teachers 1 and 2 there was not much difference in the mean percent of physical contact during observers presence or absence. When Teacher 1 was Requested to Increase Physical Contact there was a higher percent of physical contact when the observer was present than when the observer was absent. For Teacher 1, however, her amount of physical contact did not increase substantially so she was allowed to see her graph plus see the observation code of physical contact. This increased her amount of contact as well as eliminated the difference between observer presence and absence. When Teacher 1 was no longer allowed to see her graph and the observation code she maintained a high level of physical contact both when the observer was present and absent.

Following baseline for Teacher 2 a Request to Increase Physical Contact was made. There was a distinct increase in physical contact as well as more physical contact when the observer was present rather than when the observer was absent.

DISCUSSION

This pilot research gave some indication that teachers do increase a specific, requested behavior when an observer is present and decrease it when it appears that the observer is no longer taking data. By the use of the daily switching between observer in and observer out and beginning the request to increase contact at a different point in time for each of the two teachers, there is some experimental justification that people will "turn on" when an observer is obviously present. Teacher 2, who had had practice in changing her own behavior in her first practicum teaching experience, demonstrated the most extreme change in behavior when an observer was present. Teacher 1 also demonstrated an observer effect the majority of the observations in all conditions. When Teacher 1 was allowed to see her graph and the code daily, her behavior increased and consistently "turned on" throughout the remainder of the study (this reconfirms the findings of Cooper, Thomson and Baer, 1970). However, the change in conditions for Teacher 1 did not have as great of an effect as for Teacher 2.

This study is only a beginning in the examination of the effect of an observer's presence on teachers' behaviors. If the results of

this study are replicable, it will be necessary to find some way to assure that specific techniques are carried out consistently in the absence of an observer or experimenter. These results could explain why many people find that behavior modification techniques are not effective over time. Many studies that have examined specific modification techniques may have been more successful if they could insure that the technique was used throughout the day or setting.

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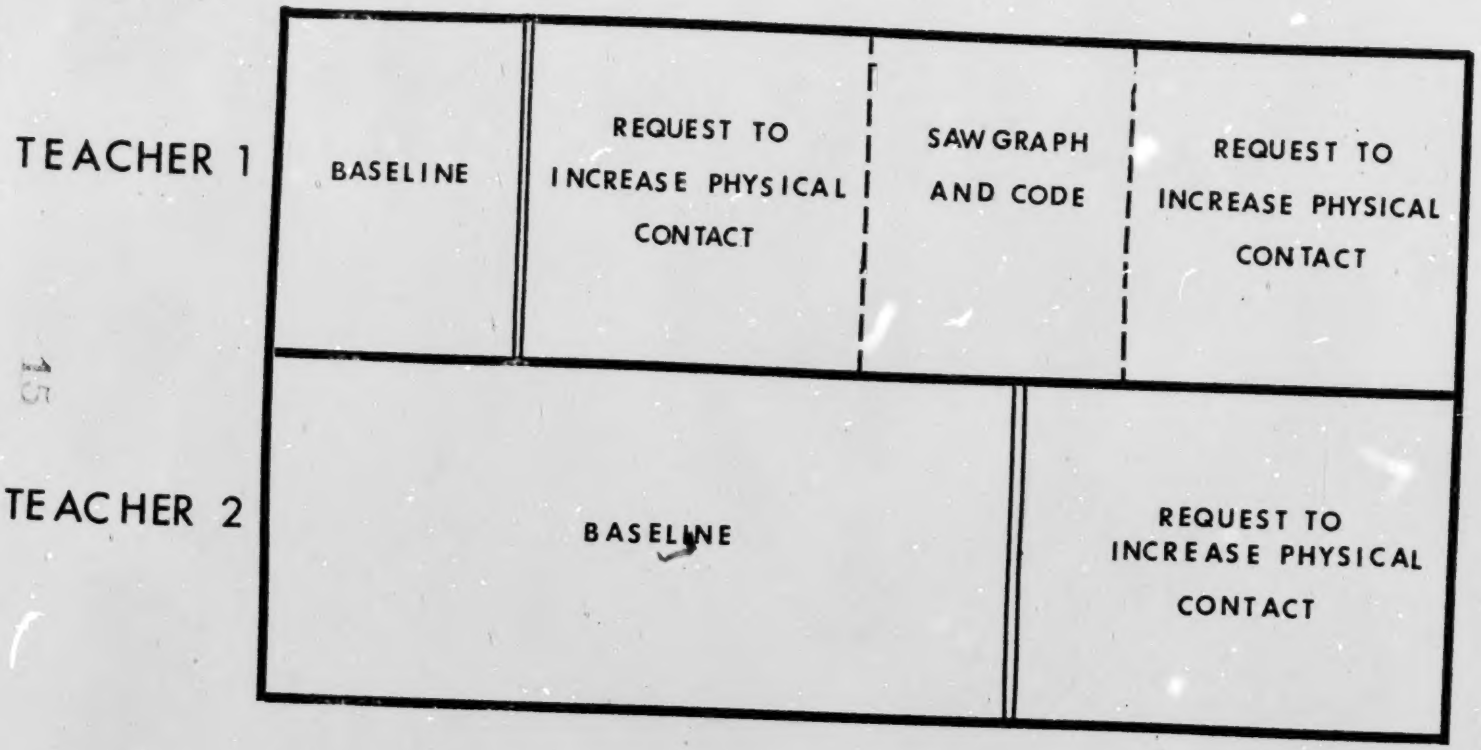
FIGURE CAPTIONS

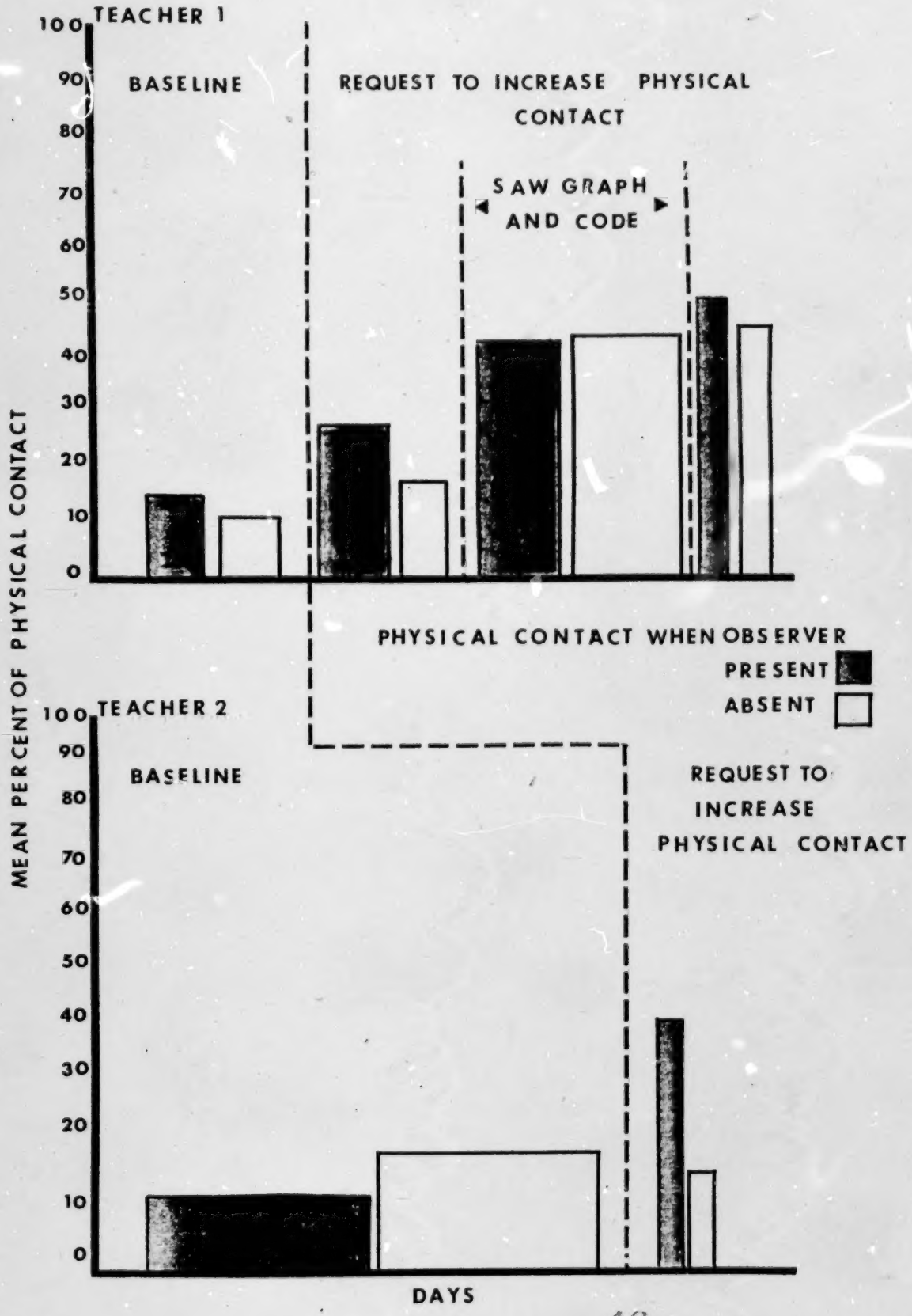
Figure 1. Sequence of experimental conditions for Teacher 1 and 2.

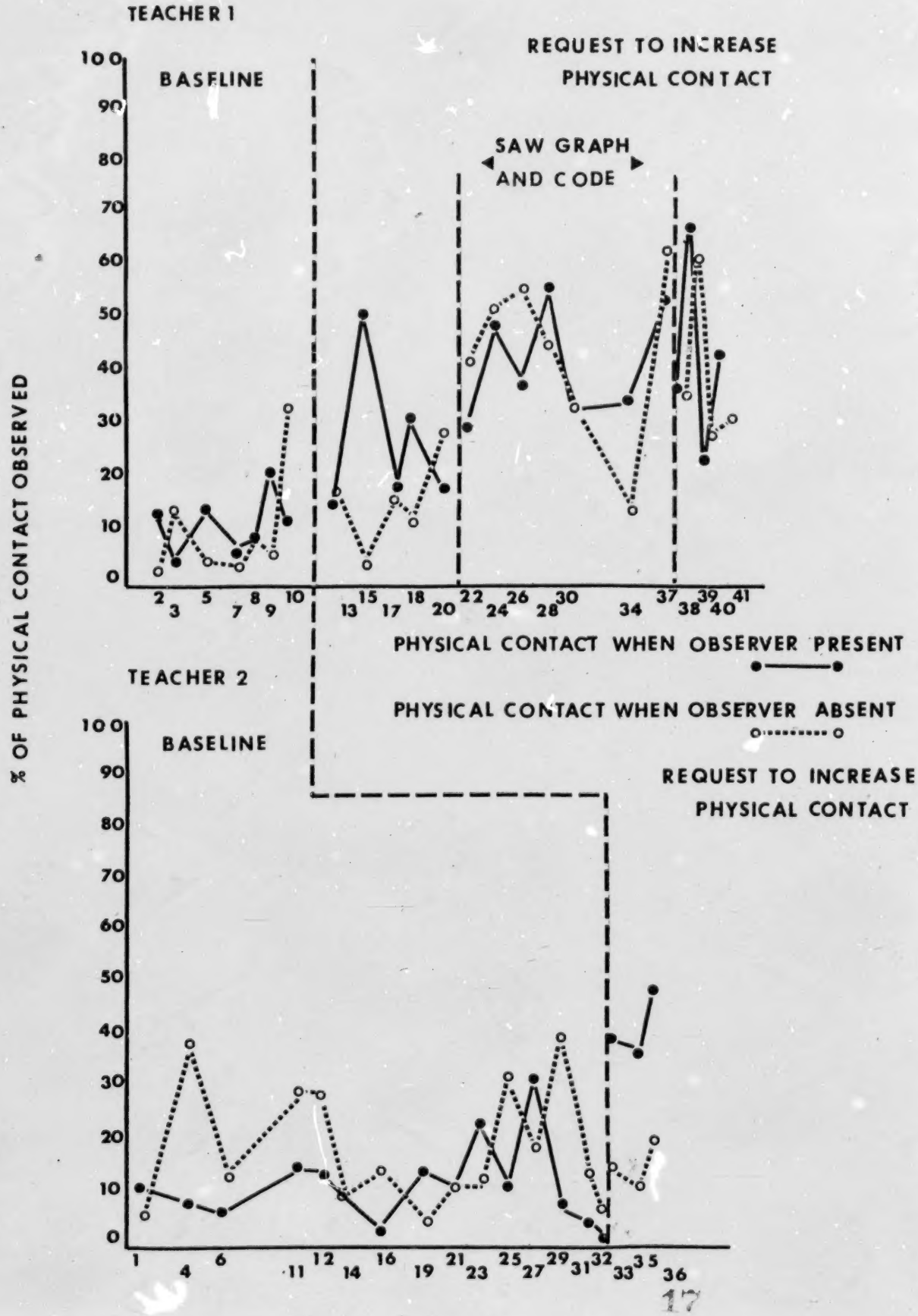
Figure 2. The mean percent of physical contact during the daily 10-minute observer present and observer absent periods across experimental conditions.

Figure 3. The daily percent of physical contact for Teacher 1 and Teacher 2 during observer present and observer absent periods across experimental conditions.

SEQUENCE OF EXPERIMENTAL CONDITIONS




TEACHER 1
BASELINE
REQUEST TO INCREASE PHYSICAL CONTACT
SAW GRAPH AND CODE
100
90
80
70
60
50
40
30
20
10
0
MEAN PERCENT OF PHYSICAL CONTACT
PHYSICAL CONTACT WHEN OBSERVER
PRESENT
ABSENT
TEACHER 2
BASELINE
REQUEST TO INCREASE PHYSICAL CONTACT
DAYS


TEACHER 1
REQUEST TO INCREASE PHYSICAL CONTACT
BASELINE
SAW GRAPH AND CODE
% OF PHYSICAL CONTACT OBSERVED
100
90
80
70
60
50
40
30
20
10
0
2 3 5 7 8 9 10 13 15 17 18 20 22 24 26 28 30 34 37 38 39 40 41
PHYSICAL CONTACT WHEN OBSERVER PRESENT
PHYSICAL CONTACT WHEN OBSERVER ABSENT
TEACHER 2
BASELINE
REQUEST TO INCREASE PHYSICAL CONTACT
1 4 6 11 12 14 16 19 21 23 25 27 29 31 32 33 35 36